

We claim:

1. A medical records, documentation, tracking and order entry system, comprising single or multiple fault tolerant file servers with single or multiple fault tolerant backup servers, with each server having either standard hard drives or redundant array of independent drives, a communications server(s) linked to each of the file servers for receiving incoming transcription and for remote reception of software, maintenance and system updates from a software vendor, a network having a hub connected to the file servers, peripheral terminals connected to the network in a star configuration with the hub, the peripheral terminals having individual central processing units with hard disks, touch screens, monitor, keyboards and mouses connected to the CPU's, software residing in the communication server(s), in the file servers, and in the peripheral CPU's for receiving patient data in the peripheral CPU's via the touch screens, mouses, and keyboards and for storing the patient data in the peripheral CPU's and the file servers; and a distributed dictation system having inputs adjacent the CPU's, a transcription system for receiving dictation from the inputs and connected to the communication server(s) for transmitting transcribed dictations to the communications server(s) and placing the transcribed dictations in an electronic storage bin for transferring the dictated transcriptions to the file servers, storing the dictated transcriptions in the file servers as text associated with the patient data for particular patients, printers connected to the

network for printing reports on individual patients and system management reports of system operations, doctor related activities, nursing related activities and patient statistics.

2. A method of patient record documentation, tracking and order entry, comprising providing software in file servers, providing software from the file servers through a network hub and network to multiple CPU's, entering patient data in the multiple CPU's by touch screens, mouses and keyboards in response to data entry screens on monitors connected to the CPU's, transferring the patient data from the CPU's to the file servers, dictating portions of the record that are unique to particular patients, transmitting the dictation over lines to a transcription center, transcribing the dictation and transmitting the dictation transcriptions to a communication server(s), feeding the dictation transcriptions to the file servers as text, storing the text with the tabled data on particular patients in the file servers, storing word and sentence generation and coordination software in the peripheral CPU's, displaying on the peripheral CPU monitors text sentences in medical English text generated from patient data by the generation software, as and *JHR* *JB* combined with the text from the dictation transcriptions assembled as summaries, and providing the text summaries from the peripheral CPU's to printers via the network for generation of printed patient textual reports.

3. The method of claim 2, further comprising installing utility software in the peripheral CPU's and generating

management reports in the peripheral CPU's by calling data over the network from the file servers and compiling the data as text and directing the compiled data to the printer.

4. The method of claim 2, further comprising producing nurses' notes by entering data on touch screens, mouses and keyboards, transferring the data of nurses' notes from the peripheral CPU's to the file servers, storing the nurses' notes data in the file servers, transmitting the nurses' notes data to the peripheral CPU's, recompiling the data into nurses' notes text in the CPU's, displaying the nurses' notes as text on the peripheral CPU monitor screens, and printing the nurses' notes text on the printer.

5. The method of claim 2, further comprising storing prephrased text examples in the peripheral CPU's, and preliminarily inputting prephrased personalized text by individual physicians and nurses, and compiling the selected text with data for producing medical English text summaries and reports.

6. The method of claim 2, further comprising storing text in the CPU's, generating nurses' orders by entering physician orders to nurses with touch screens, mouses and keyboards at peripheral CPU's, transmitting the physician orders as physician orders data to the file servers, storing physician orders data with the patient tabled data in the file servers, providing the physician orders data with the patient data from the file servers to the peripheral CPU's, compiling the physicians' orders data,

patient data and stored text, and displaying the physician orders data as textual nurses' orders on the displays, displaying all outstanding nurses' orders on the displays on request, displaying all nurses' orders specific to a patient on the patient display, entering executions of the nurses' orders on the patient display and automatically changing the executed nurses' orders to nurses' textual notes for display and printing in summaries.

7. The method of patient record documentation, tracking and order entry, comprising logging on to a peripheral CPU, displaying the user's name and the active patient list "grease board", and showing room location, patient's name, patient's physician, nursing orders, patient priority and elapsed time of stay, and status of assignment of nurse and physician, ordering of X-rays, labs, tests, nurses' orders, records, dictation and vital signs.

8. The method of claim 7, wherein the status is shown in small letters for ordering of X-rays, labs, tests, nurses' orders and dictation, and large letters for completion of X-rays, labs, tests, nurses' orders and transcription of dictation.

9. The method of claim 7, further comprising alternately displaying active patient list information in department layout.

10. The method of claim 7, further comprising alternately displaying the list of patients waiting to be seen by a physician, in order of priority.

11. The method of claim 7, further comprising alternately displaying patient lists by patient complaints.

12. The method of claim 7, further comprising alternately displaying patient lists by patients whose reports have not been dictated by the physician.

13. The method of claim 7, wherein the logging on comprises inserting a security card in a receiver connected to the peripheral CPU, which logs on and identifies the user and brings up the active patient list.

14. The method of claim 13, wherein pulling the card from the receiver automatically exits the screen, establishes a security lockout on the terminal, and saves the data which has been entered on the screen by transferring the data from the peripheral CPU to file servers connected to the CPU.

15. The method of patient record documentation tracking and order entry, comprising entering patient data in one of plural peripheral CPU's by touching a touch screen or by moving and clicking a mouse, entering specific patient complaints by touch screen or mouse, and automatically generating potential differential diagnosis from a specific patient complaint according to sex and age in the patient data.

16. The method of claim 15, further comprising displaying the differential diagnosis in two levels, a first level and a second level, the first level having all potential diagnoses associated with the specific complaint, the second level having a relatively short list of most common and most serious potential diagnoses which are specific to the complaint, both first and second levels being age and sex specific.

17. The method of claim 15, further comprising entering patient treatment data by touch screen and mouse at the peripheral CPU, transferring the patient treatment data from the CPU to file servers, providing patient instruction sets in the peripheral CPU's, automatic selection of patient instructions by the software according to the treatment data, the diagnosis data and the complaint data, and transferring selected patient instructions from the peripheral CPU to a printer for printing patient instructions and a patient record.

18. The method of claim 17, further comprising storing in the peripheral CPU's alphabetical listings of all drugs and drugs commonly prescribed by a physician, and displaying the commonly prescribed drugs in response to a touch screen or mouse request for a drug display by the physician, selecting the desired drugs from the display of commonly used drugs by the touch screen or mouse, from an alphabetical listing, drug category listing, or from a doctor-specific personal preference listing; preselecting a drug, number, route and dosage from the listing, displaying the prescriptions on a display in response to a request for the prescription display by the physician, generating nursing medication orders in the patient records, in the outstanding order list, generating prescription, transmitting the prescription data to the file servers for inclusion in the medical records and in the patient instruction, and transferring the prescription data to the printer for printing a prescription and associated patient instructions.

19. The method of claim 17, further comprising storing advance cardiac life support (ACLS) documentation software in the peripheral CPU's, displaying ACLS screens on peripheral CPU monitors, checking specific treatments on the monitor by touch screen, mouse or keyboard, and entering specific treatments data by checking or touching a procedure performed button, medication given button or rhythm documented button, transferring the data to the file server, including the procedure, medication or rhythm and the time of the procedure, medication or rhythm, calculating the elapsed time since the procedure, medication or rhythm was input at the peripheral CPU.

20. The method of claim 19, further comprising providing on the monitor ACLS medication screens, ACLS procedure screens and ACLS rhythm screens which are exchangeable back and forth on the monitor, all of the medication screens, procedure screens and rhythm screens having "given/Performed" buttons for entering the time and procedure, medication, or rhythm in the ACLS history and "history of ACLS" buttons for displaying the ACLS history, with means in the peripheral CPU for displaying elapsed time since each entry of medication, procedure and rhythm was logged.

21. The method of claim 19, further comprising entering ACLS history in the patient medical record, which is compiled in medical English text by the peripheral CPU and transmitted to the printer for printing of the complete patient record with the ACLS procedures, and additionally with all ACLS data sent from the peripheral CPU to the file servers.

22. The method of claim 15, further comprising providing documentation of laceration repair by displaying laceration screens which document all laceration repair materials and procedures applied to each of multiple layers of tissue and multiple wounds on a patient.

23. The method of video instruction on demand, comprising storing prepared video patient instructions in a file server, preselecting the video instructions according to complaint, sex, age, prescriptions and procedures, selecting video instructions from preselected video instructions and displaying the selected instructions, whereby video patient instructions can be provided on the screen of any terminal CPU to instruct patients in the proper care of and information about medical conditions.

24. The method of claim 23, further comprising providing video instruction on demand whereby video patient instructions can be provided to assist in obtaining informed consent for performing medical procedures.

25. <sup>A</sup> ~~The method of medical language generation from data, comprising storing sentences and phrases related to medical data in peripheral CPU's, inputting patient data, transferring patient data to file servers and tabling patient data, transferring the tabled patient data to the CPU's and compiling sentences and paragraphs in the CPU's from the stored sentences and phrases and the patient data, whereby stored medical facts are converted into sentence structure.~~

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26. The method of claim 25, further comprising the rearrangement of medical facts in sentence structure into a medically appropriate order.

27. The method of claim 26, further comprising the automatic consolidation of automatically generated medical English text with patient-related stored text (such as dictated transcripts).

28. The method of claim 27, further comprises automatic insertion of headlines and sub headlines where appropriate.

29. The method of claim 27, further comprises the automatic use of bold, italic, and larger text sizes to emphasize important medical sections or information.

30. The method of claim 15, further comprising providing automatic backup of data without requiring users to stop using the system while such backup is taking place.

31. The method of claim 30, further comprises the automatic interim backup of only data that has changed since the last backup without requiring users to stop using the system while such backup is taking place.

32. The method of claim 15, further comprising automatically recording each time the physician visits the patient's room.

33. The method of claim 15, whereby a user can, from any terminal, local or remote, with the proper security authorizations, initiate a teleconferencing link and allow for both video and audio communications between the linked users.

34. The method of claim 15, whereby research data can be automatically extracted from medical data with identifying patient demographics removed to provide for the extensive research of historical medical data.

35. The method of claim 15, whereby electronic signatures can be attached to medical documents and automatically printed with such documents.

36. The method of claim 35, further comprises the security procedures used to insure that electronic signatures are only placed by an authorized user.

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